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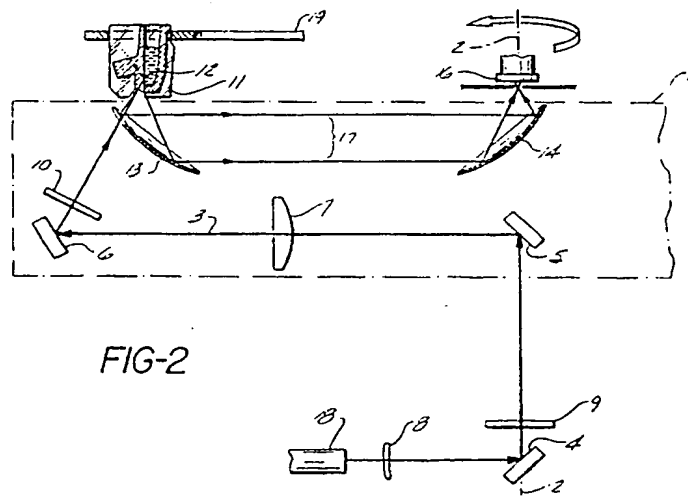
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(54) Scattered total internal reflectance apparatus.

(57) A new immunoassay system is provided for the detection of ligands or ligand binding partners in solution in a heterogeneous format. The invention relies upon the detection of back scattered light from an evanescent wave disturbed by the presence of a colloidal gold label brought to the interface by an immunological reaction. The evanescent wave exist-

ing at the interface in turn is the result of a totally internally reflected incident light wave. Placement of the detector at a back angle above the critical angle insures a superior signal-to-noise ratio. Apparatus and methods for scanning, detecting and manipulating light including a scattered total internal reflectance immunoassay system are provided.



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
Y	OPTICS AND LASER TECHNOLOGY vol. 18, no. 4, August 1986, pages 213-215, Haywards, Heath, GB; D.W. SWIFT: "Rotation prisms in series" * page 214, column 1, line 30 - column 2, line 11; figure 2 *	1-4	G01N21/17 G01N33/53
Y	US-A-4650335 (TOKUHISA ITO et al.) * column 2, lines 23-68; figure 1; column 3, lines 60-65 *	1-4	
A	US-A-4844593 (D.R. PARKER et al.) * column 4, lines 21-65; figure 2 *	1,2,4	
A	OPTICS COMMUNICATIONS vol. 66, no. 2-3, 15 April 1988, pages 83-87, Amsterdam, NL; V. NAPASAB et al.: "New polarization-state control scheme: polarization recombining" * page 85, column 2, line 3 - page 86, column 2, line 14; figure 2 *	1,2,4	
P,X	EP-A-0326375 (ORTHO DIAGNOSTIC SYSTEMS INC.) * column 18, line 63 - column 20, line 28; figures 2-4 *	1-6,9,10	
X	N.T.I.S. TECHNICAL NOTES no. 1, part J, January 1986, pages 89,90, Springfield, Virginia, US; P.D. ATCHESON: "Wide Angle, Wide-Band Camera for Remote Imaging" * whole document *	5,6	
.../2			
The present search report has been drawn up for all claims			
Place of search Berlin		Date of completion of the search 07.05.1991	Examiner P.J. MOUTARD
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid.
- namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

x LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions.

namely:

- | | |
|-----------------|---|
| 1. claims: 1-4 | An apparatus and method for scanning a plane polarized light ... |
| 2. claims: 5-8 | An apparatus and method for detection of light ... |
| 3. claims: 9,10 | A light trap and a method for dissipating the specular reflection ... |

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid.
- namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.

namely claims:



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 8)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	US-A-4591266 (W.M. DOYLE) * figure 4 *	5,6	
X	US-A-4655555 (M. MÄCHLER et al.) * column 5, lines 20-33; column 6, lines 1-13; figures 2,4b *	7,8	
A	US-A-3893754 (J.A. McINALLY) * whole document *	7,8	
X	US-A-3715585 (N.J. HARRICK) * abstract; column 3, line 9 - column 5, line 7; figures 2,3 *	9,10	TECHNICAL FIELDS SEARCHED (Int. Cl. 8)
X	US-A-3604927 (T. HIRSCHFELD) * whole document *	9,10	
A	PATENT ABSTRACTS OF JAPAN vol. 9, no. 163 (P-371) (1886), 9 July 1985; & JP - A - 60041001 (KOGYO GIJUTSUIN) 04.03.1985	10	